LISTING OF THE CLAIMS

Please replace this listing of the claims in lieu of all previous listings.

1. (Previously presented) An immunogenic composition comprising a live *Brucella* host cell having a rough phenotype, which host cell contains at least two mutations so as to effect sufficient attenuation such that upon exposure to a mammal the host cell will not exhibit full virulence of non-attenuated *Brucella*, wherein the host cell is transformed with a recombinant DNA construct replicable in *Brucella*, which DNA construct comprises:

   (i) a promoter recognizable by *Brucella*, and

   (ii) a complementation DNA fragment which encodes a peptide required for lipopolysaccharide O-sidechain synthesis so as to effect lipopolysaccharide O-sidechain synthesis in vivo and which is operably linked to the promoter and which complements a rough-conferring mutation in the host cell, thereby effecting a smooth phenotype in the host cell ,

wherein the association between the *Brucella* host cell and the DNA construct is such that following exposure to a mammal the DNA construct gradually separates from the *Brucella* host cell, whereupon the *Brucella* host cell reverts to a rough phenotype that is rapidly and safely cleared from the mammal.

2. (Original) The immunogenic composition of claim 1, wherein the *Brucella* host cell comprises a *Brucella* DNA fragment containing a stable non-reverting deletion mutation, having the nucleotide sequence of SEQ ID NO: 1 modified to delete nucleotides from position 1067 to position 1671.

3. (Original) The immunogenic composition of claim 1, wherein the *Brucella* host cell is *Brucella melitensis*.

4. (Original) The immunogenic composition of claim 1, wherein the *Brucella* host cell is WRRP1, having ATCC accession number PTA-3753.

5. (Original) The immunogenic composition of claim 4, wherein *Brucella* host cell WRRP1 has no antibiotic resistance markers.

Claims 6-7 (Canceled)

8. (Original) The immunogenic composition of claim 1, wherein the promoter is a *Brucella* promoter.

9. (Original) The immunogenic composition of claim 1, wherein the complementation DNA fragment comprises the *wboA* gene.

Claim 10 (Canceled)

11. (Previously presented) An immunogenic composition comprising a live attenuated *Brucella* host cell having a rough phenotype, which host cell contains at least two mutations so as to effect sufficient attenuation such that upon exposure to a mammal the host cell will not exhibit full virulence of non-attenuated *Brucella*, wherein the host cell is transformed with a recombinant DNA construct replicable in *Brucella*, which DNA construct comprises:

(i) a DNA fragment operably linked to a first promoter recognizable by *Brucella*, and encoding a heterologous antigen; and

(ii) a complementation DNA fragment which encodes a peptide required for lipopolysaccharide O-sidechain synthesis so as to effect

lipopolysaccharide O-sidechain synthesis in vivo and which is operably linked to a second promoter recognizable by *Brucella*, and which complements a rough-conferring mutation in the host cell, thereby effecting a smooth phenotype in the host cell cell,

wherein the association between the *Brucella* host cell and the DNA construct is such that following exposure to a mammal the DNA construct gradually separates from the *Brucella* host cell, whereupon the *Brucella* host cell reverts to a rough phenotype that is rapidly and safely cleared from the mammal.

12. (Original) The immunogenic composition of claim 11, wherein the *Brucella* host cell comprises a *Brucella* DNA fragment containing a stable non-reverting deletion mutation, having the nucleotide sequence of SEQ ID NO: 1 modified to delete nucleotides from position 1067 to position 1671.

13. (Original) The immunogenic composition of claim 11, wherein the *Brucella* host cell is *Brucella melitensis*.

14. (Original) The immunogenic composition of claim 11, wherein the *Brucella* host cell is WRRP1, having ATCC accession number PTA-3753.

15. (Original) The immunogenic composition of claim 11, wherein *Brucella* host cell WRRP1 has no antibiotic resistance markers.

Claims 16 and 17 (Canceled)

18. (Original) The immunogenic composition of claim 11, wherein the promoter is a *Brucella* promoter.

19. (Previously presented) The immunogenic composition of claim 11, wherein the heterologous antigen is selected from the group consisting of anthrax antigens, *Yersinia pestis* F1 and V antigens and F1-V fusion proteins, malaria circumsporozoite and merozoite antigens, *Plasmodium berghei* antigens, *Plasmodium falsiparum* antigens, *Plasmodium vivax* antigens, *Plasmodium malariae* antigens, *Francisella* antigens, staphylococcal and streptococcal enterotoxin fragment antigens; *Burkholderia* antigens, *Coxiella* antigens, *Clostridium* epsilon toxoids, botulinum toxoids, smallpox antigens, mycobacterial antigens, cancer antigens, HIV antigens, tetanus toxoids, diphtheria toxoids, pertussis toxoid, *Helicobacter* antigens, *Borrelia* antigens, *Legionella* antigens, *Bartonella* antigens, vaccinia antigens, antigen-GFP fusions, tagged antigens 6his and V5, and fusions of antigens to secretory signals.

20. (Original) The immunogenic composition of claim 19, wherein the anthrax antigen is selected from the group consisting of *Bacillus anthracis* protective antigen and inactive variants of Edema Factor and Lethal Factor.

21. (Original) The immunogenic composition of claim 19, wherein the malaria antigens are CSP and MSP1 antigens of *Plasmodium berghei*, *Plasmodium falsiparum*, *Plasmodium vivax*, or *Plasmodium malariae*.

Claim 22. (Canceled)

23. (Original) The immunogenic composition of claim 11, wherein the complementation DNA fragment comprises the *wboA* gene.

Claim 24. (Canceled)

25. (Previously presented) A vaccine against infection by brucellosis, comprising a live *Brucella* host cell having a rough phenotype, which host cell contains at least two mutations so as to effect sufficient attenuation such that upon exposure to a mammal the host cell will not exhibit full virulence of non-attenuated *Brucella*, wherein the host cell is transformed with a recombinant DNA construct replicable in *Brucella*, which DNA construct comprises:

(i) a promoter recognizable by *Brucella*, and

(ii) a complementation DNA fragment encodes a peptide required for lipopolysaccharide O-sidechain synthesis so as to effect lipopolysaccharide O-sidechain synthesis in vivo and which is operably linked to the promoter and which complements a rough-conferring mutation in the host cell, thereby effecting a smooth phenotype in the host cell,

wherein the association between the *Brucella* host cell and the DNA construct is such that following exposure to a mammal the DNA construct gradually separates from the *Brucella* host cell, whereupon the *Brucella* host cell reverts to a rough phenotype that is rapidly and safely cleared from the mammal.

26. (Original) The vaccine of claim 25, wherein the *Brucella* host cell comprises a *Brucella* DNA fragment containing a stable non-reverting deletion mutation, having the nucleotide sequence of SEQ ID NO: 1 modified to delete nucleotides from position 1067 to position 1671.

27. (Original) The vaccine of claim 25, wherein the *Brucella* host cell is *Brucella melitensis*.

28. (Original) The vaccine of claim 25, wherein the *Brucella* host cell is WRRP1, having ATCC accession number PTA-3753.

29. (Original) The vaccine of claim 28, wherein *Brucella* host cell WRRP1 has no antibiotic resistance markers.

Claims 30-31 (Canceled)

32. (Original) The vaccine of claim 25, wherein the promoter is a *Brucella* promoter.

33. (Original) The vaccine of claim 25, wherein the complementation DNA fragment comprises the *wboA* gene.

Claim 34 (Canceled)

35. (Previously presented) The vaccine of claim 25, wherein when the vaccine is administered to a vaccinee, the lipopolysaccharide O-sidechain polysaccharide is produced in vivo and an antibody to the lipopolysaccharide O-sidechain polysaccharide is produced by the vaccinee in response.

Claims 36-68 (Canceled)

69. (Original) DNA construct pGSG5.

70. (Previously presented) The immunogenic composition of claim 1, wherein the DNA construct would be cleared out from a mammal in about eight weeks or less.

71. (Previously presented) The immunogenic composition of claim 1, wherein the *Brucella* host cell contains three mutations.

72. (Previously presented) The immunogenic composition of claim 11, wherein the DNA construct would be cleared out from a mammal in about eight weeks or less.

73. (Previously presented) The immunogenic composition of claim 11, wherein the *Brucella* host cell contains three mutations.

74. (Previously presented) The vaccine of claim 25, wherein the DNA construct would be cleared out from a mammal in about eight weeks or less.

75. (Previously presented) The vaccine of claim 25, wherein the *Brucella* host cell contains three mutations.

Claims 76-77 (Canceled)